4. WORK PLAN AND METHODOLOGY

A Study of Water Quality of the River 'Mithi' in Mumbai Metropolis will be carried out for seasonal variation i.e. pre-monsoon, monsoon and post-monsoon seasons.

Working plan is divided into four parts of six month duration.

1) 1-6 MONTHS-
   - Review of literature

     Literature review will be done by -
     - Referring standard journals and books from university library
     - Referring E-journals & E-Books
     - Discussion with guide about literature and planning about the work
   - Selection of sampling stations representing the various activity along the course of the Mithi River
   - Selection of physicochemical parameters and Heavy metals to be studied

2) 6-12 MONTHS-
   - Weekly collection of water samples from selected stations in morning and evening
   - Analysis of water samples for physicochemical parameter
   - Instrumental analysis
     - PH- using PH Meter
     - Turbidity- using Nefleltometer
     - Electric conductance-using conductometer
     - Na&K - using flame Photometer
     - Fluorides - using Spectrophotometer
     - Heavy Metals - using Atomic absorption spectrophotometer
     - Nitrogen - using spectrophotometric method
     - PO_4^{-3}- using spectrophotometric method
   - Non –Instrumental Analysis
     - DO - using Winkler Method
     - COD - by reflux $K_2Cr_2O_7$ Method
     - BOD - by modified Winkler method

- Total Hardness - titrimetric method using EDTA&EriochromeBlackT
- Chlorides - using titrimetric method using $AgNO_3$& K_2CrO_4
- Alkalinity - using acidimetric titration
- CO_3^{-2}&HCO_3^{-1}- by titrimetric method
- SO_4^{-2} - by gravimetric analysis
- Total dissolved solid - by evaporation water in evaporating dish &measuring weight of residue
- Oil &greases - by using solvent extraction method

3) 12-18MONTHS

- Analysis of water samples as per schedule time table
- Comparison of data obtained at different sampling station with seasonal variation
- Publication of research paper
- Regular update of references on water pollution

4) 18-24 MONTHS

- Statistical analysis of observed data
- Recommendations for the management plans
- Compilation of work done and writing the thesis
- Submitting the thesis to award a degree